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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/865,608

05/25/2001

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(500569.20067)

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07/01/2003

REED SMITH, LLP
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EXAMINER

CANTELMO, GREGG

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 07/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/865,608

Applicant(s)

HAMAMOTO ET AL.

Examiner

Gregg Cantelmo

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. No IDS appears to have been filed with the application prior to this office action.
3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2 and 5-10 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 10-321258-A (JP '258).

JP '258 discloses a non-aqueous electrolytic solution and a lithium secondary battery comprising a positive electrode, negative electrode and non-aqueous electrolytic solution which comprises a non aqueous solvent and an electrolyte which further contains 0.001 to 0.8 weight % of a biphenyl derivative having the following formula as shown in claim 1 in which each of Y¹ and Y² independently represents a hydroxyl group, an alkoxy group, a hydrocarbyl group, a hydrogen atom, an acyloxy group, an alkoxycarbonyloxy group, an alkylsulfonyloxy group or a halogen atom, and each of p and q independently is an integer of 1 to 3 (abstract, Example 1 and paragraph [0055]). Note in paragraph [0055] the biphenyl weight is 35% of that of Example 1 and is therefore 35% of 2% by weight, or 0.7 % by weight (as applied to claims 1 and 9).

The biphenyl derivative has the following formula as shown in claim 2 in which Y represents a hydroxyl group, an alkoxy group, a hydrocarbyl group, a hydrogen atom, an acyloxy group, an alkoxycarbonyloxy group, or an alkylsulfonyloxy group (abstract, Example 1 and paragraph [0055] as applied to claim 2 and 10).

The non-aqueous solvent comprises a combination of a cyclic carbonate and a linear chain carbonate (paragraph [0049 as applied to claims 5 and 6).

The non-aqueous solvent comprises a high dielectric constant solvent which is selected from the group consisting of *ethylene carbonate*, *propylene carbonate*, and butylene carbonate, and a low viscosity solvent which is selected from the group consisting of *dimethyl carbonate*, methyl ethyl carbonate, diethyl carbonate, tetrahydrofuran, 2-methyltetrahydrofuran, 1,4-dioxane, 1,2-dimethoxyethane, 1,2-

Art Unit: 1745

diethoxyethane, 1,2-dibutoxyethane, γ -butyrolactone, acetonitrile, methyl propionate, and dimethylformamide (paragraph [0049] as applied to claims 7 and 8).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '258.

The teachings of claims 1 and 2 have been discussed above and are incorporated herein.

The difference between claims 3 and 4 and JP '258 is that JP '258 does not explicitly disclose the amount of the biphenyl derivative is in the range of 0.01 to 0.5 weight %.

JP '258 teaches that the additive should less than 5 wt.% and with biphenyl about 2-3 wt.% (abstract).

But JP '258 additionally teaches in paragraph [0055] that using 35% of the weight of biphenyl used in example 1 (35% of 2 wt.%, or 0.7 wt.%) also shows that the cycle property at reduced biphenyl wt.% is still excellent. Thus there is a teaching that levels below 2 wt.% such as 0.7 wt.% still provide excellent cycle properties in the battery.

JP '258 first teaches that less than 5 wt% is desired, then first exemplifies 2 wt.% and later even further reduced wt.% below 2 wt.%. Thus JP '258 appreciated wt.% values less than 2 wt.%, such as 0.7 wt.%. And considering that JP '258 does not teach of a value of biphenyl within the range of less than 5 wt.% that is undesirable or does not provide excellent cycle properties, one of ordinary skill in the art would have had ample teachings for any and all wt.% below 5 wt.% since JP '258 shows that for levels significantly lower than 2 wt.%, excellent cycle properties are still achieved.

In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919, F.2d 1575, 16 USPQ 2d 1934 (Fed. Cir. 1990).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of JP '258 by using 0.01 to 0.5 wt. % of biphenyl since JP '258 recognized that any amount less than 5 wt % would have provided excellent cycle properties.

Conclusion

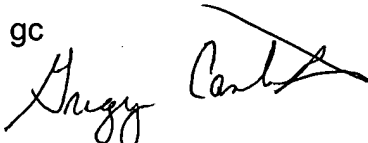
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (703) 305-0635. The examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 5:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (703) 308-2383. FAX communications should be sent to the appropriate FAX number: (703) 872-9311 for

Art Unit: 1745

After Final Responses only; (703) 872-9310 for all other responses. FAXES received after 4 p.m. will not be processed until the following business day. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gregg Cantelmo
Patent Examiner
Art Unit 1745

gc

A handwritten signature in cursive script, appearing to read "Gregg Cantelmo", with a long horizontal flourish extending to the right.

June 25, 2003